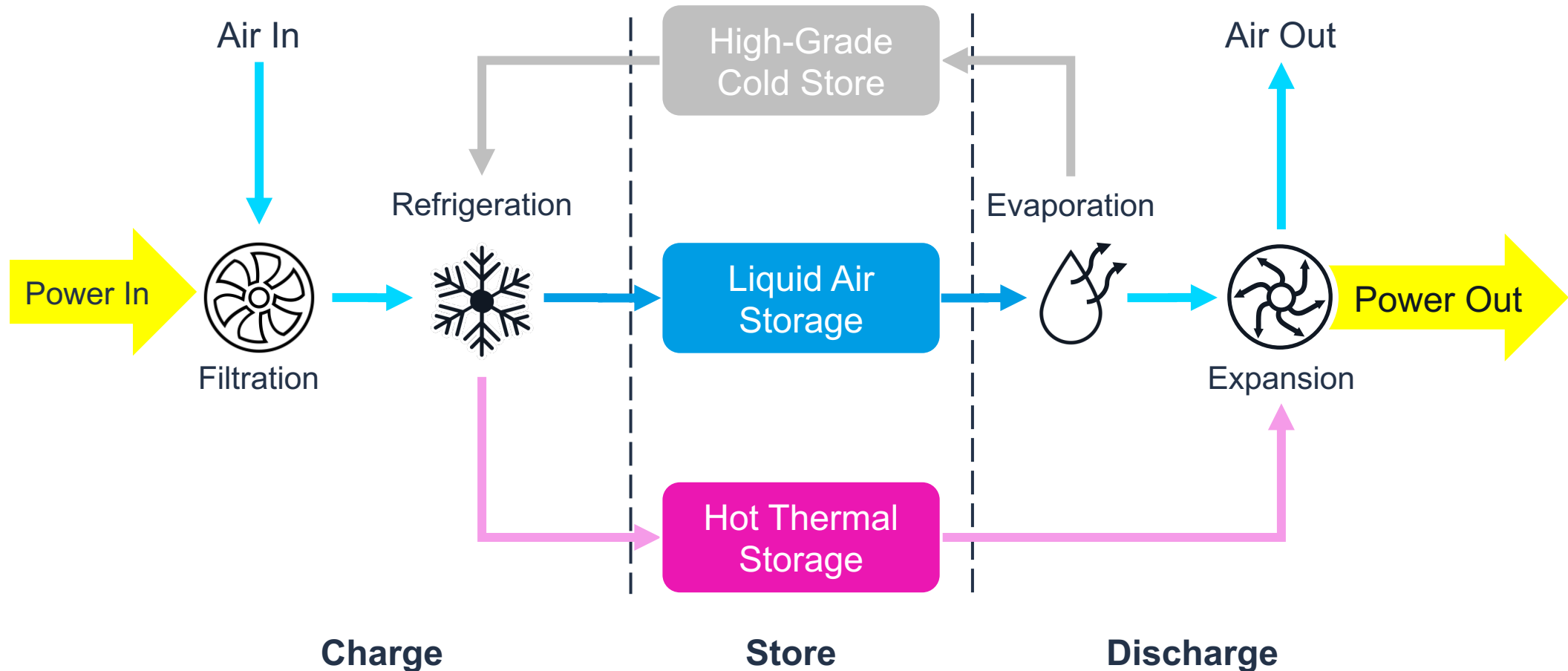


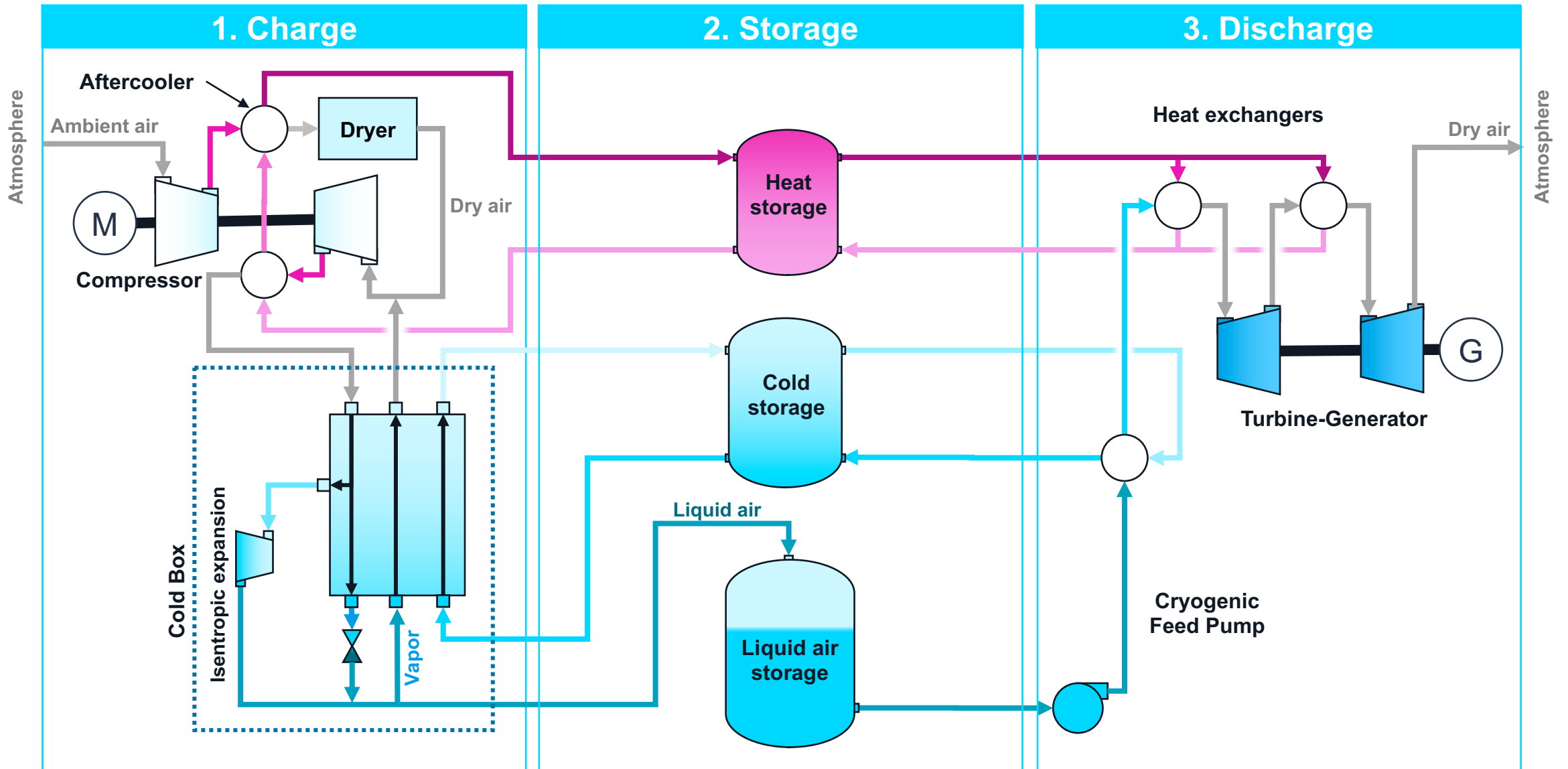
# Liquid Air Energy Storage

DOE Long Duration Energy Storage Workshop, March 10, 2021

# How Liquid Air Energy Storage Works



# The Process



# Grid Connected Systems



## 50 MW Facility (400 MWh shown)

Beginning construction in Europe, Late-stage development in the U.S.  
Construction start **2020**  
Planned COD **2022**



## Pilot

350 kW / 2.5 MWh  
Heathrow, UK  
Commissioned in **2011**



## Demonstration

5MW / 15 MWh  
Manchester, UK  
Commissioned in **2018**



## CRYOBattery One

50MW / 250 MWh  
Manchester, UK  
Constr. start Nov. 2020



# Challenges

- Contracting paradigms for storage inherited from Li-ion and short duration
- Underdeveloped framework for accessing the system value of Long-Duration Energy Storage
- Animating a diverse supply chain around the opportunity for Long-Duration Energy Storage with few examples deployed:
  - Equipment Suppliers
  - Constructors
  - O&M providers

